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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,626	12/16/2003	Norikazu Ota	033211-041	2678
21839	7590	09/21/2005	EXAMINER	
BUCHANAN INGERSOLL PC (INCLUDING BURNS, DOANE, SWECKER & MATHIS) POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			CAO, ALLEN T	
			ART UNIT	PAPER NUMBER
			2652	

DATE MAILED: 09/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/735,626

Applicant(s)

OTA, NORIKAZU

Examiner

Allen T. Cao

Art Unit

2652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/6/03</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2652

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamijima (US. 2003/0099054 A1).

Kamijima (particular figure 15) discloses a flying type thin film magnetic head having a write head element 153 with a coil conductor and a yoke (see figures 16 and 17 which discloses that the write head includes coil conductors and a yoke), wherein a write current flowing through the coil conductor; an overcoat layer 154 laminated on the write head; and a flexible layer 157 formed in the overcoat layer 154 as set forth in claim 1.

Kamijima does not clearly disclose that the heat conductivity of the flexible layer is lower than that of the overcoat layer.

However, Kamijima discloses that the flexible layer are formed so that the thermal expansion of the magnetic head element section (not the overcoat layer) toward the ABS becomes extremely easy and the thermal expansion is sufficiently oriented toward the easily deformable direction of the flexible layers which is inherently shown that the flexible has some degrees blocking heat transferred to the overcoat layer. Kamijima also discloses that the flexible layer is a thermal cured resist layer ([0091], lines 4-6).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to indicate that the flexible layer of Kamijima has the heat conductivity to be lower than that of the overcoat layer.

The rationale is as follows: One of ordinary skill in the art would have been motivated to modify/indicate that the flexible layer of Kamijima has the heat conductivity to be lower than that of the overcoat layer in order to block heat transferred to the overcoat layer, thus heat is transferred to the magnetic head element so that that the thermal expansion of the magnetic head element section (not the overcoat layer) toward the ABS becomes extremely easy, therefore, to improve the write characteristics.

Regarding claim 2, Kamijima discloses that the flexible layer is formed to cover a region with an area larger than that of a region on which the coil conductor is formed.

Regarding claim 3, Kamijima discloses that the flexible layer is formed to cover over the coil conductor.

Regarding claim 4, Kamijima discloses that the flexible layer is formed in parallel with a plane on which the coil conductor is formed.

Regarding claim 7, Kamijima also discloses a heater 155 formed below the flexible layer for generating heat when the head is in operation.

Regarding claim 8, Kamijima discloses that the flexible layer is a resist layer ([0091], lines 4-6).

Regarding claim 9, Kamijima further discloses a read head element 152.

Art Unit: 2652

Regarding claims 5 and 6, Kamijima does not disclose that a distance between the flexible layer and an air bearing surface is less than 15 μm (claim 5) or less than 7.5 μm (claim 6).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to locate the flexible layer of the magnetic head of Kamijima with a distance of either less than 15 μm (claim 5) or less than 7.5 μm (claim 6) from the air bearing through an obvious routine lab experimentation and/or optimization to improve the heat blocking characteristics, thus improve read/write characteristics.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen T. Cao whose telephone number is (571) 272-7569. The examiner can normally be reached on Mon - Thurs (7:30 - 6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (571) 272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Allen Cao
Primary Examiner

AC
September 29, 2005